



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

125

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,871	01/14/2002	Sadeg Faris	VREX-0007USAAON00	1204
7590	04/23/2004		EXAMINER DUONG, THOI V	
Reveo, Inc. 85 Executive Blvd. Elmsford, NY 10523			ART UNIT 2871	PAPER NUMBER

DATE MAILED: 04/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

410

Office Action Summary	Application No. 10/045,871	Applicant(s) FARIS ET AL.	
	Examiner Thoi V Duong	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-26 and 28-61 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) 13-23, 36-50 and 52-61 ~~is/are~~ withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12, 24-26, 28-35 and 51 ~~is/are~~ rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the Amendment filed January 27, 2004.

Accordingly, claims 1 and 24 were amended, and claims 5 and 27 were cancelled. Currently, claims 1-4, 6-26 and 28-61 are pending in this application. Of the above claims 13-23, 36-50 and 52-61 are withdrawn from consideration and claims 1-4, 6-12, 24-26, 28-35 and 51 are considered in this office action.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-4, 6-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi et al. (USPN 6,074,708) in view of Gibbons et al. (USPN 4,974,941).**

Re claim 1, as shown in Fig. 6, Onishi et al. discloses a method for creating a micropolarizer, comprising:

providing a first flat glass plate 61 having a first and a second surface;

providing a second flat glass plate 62 having a first and a second surface;

Art Unit: 2871

coating a polyimide 61a, 61b on each of said first surface of said two plates (col. 24, lines 39-44; col. 25, lines 35-41 and col. 26, lines 36-40);

rubbing said polyimide coated upon said first surface of said first plate along a predetermined direction (col. 24, lines 30-35);

rubbing said polyimide coated upon said first surface of said second plate along a direction having a predetermined angle in relation to said predetermined direction (col. 24, lines 30-35);

aligning said first plate and said second plate having said first surface of said first plate and said first surface of said second plate facing each other thereby creating a space there between (Fig. 6 and col. 24, lines 44-47); and

filling a liquid crystal between said space whereby a liquid crystal cell 60 (TN mode) is created (col. 24, lines 48-51).

However, Onishi et al. does not disclose exposing said first plate to linearly polarized UV light.

As shown in Figs. 1 and 2, Gibbons et al. discloses a liquid crystal cell comprising two plates (substrates) coated with a polyimide material which has been rubbed and a guest host liquid crystal medium (col. 5, lines 4-14). Gibbons et al. also discloses a process of aligning or realigning the liquid crystal medium by exposing at least one plate to linearly polarized UV light (col. 5, lines 27-47 and col. 6, lines 1-17).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Onishi et al. with the teaching of Gibbons et al. by exposing the first plate to linearly polarized UV light so as to obtain a

Art Unit: 2871

display having two or more regions aligned in different homogeneous or homeotropic alignments (col. 2, lines 21-25).

Re claim 7, Onishi et al. discloses that space having a substantially equidistance between said first surface of said first plate and said first surface of said second plate (col. 19, line 64 through col. 20, lines 30-32).

Re claim 8, Onishi et al. discloses that said liquid crystal comprises a type of polymerizable nematic liquid crystal (col. 24, lines 26-30 and 48-57).

Re claim 10, Onishi et al. discloses that said predetermined angle is about ninety degrees (col. 24, lines 44-47).

Re claims 2 and 6, as shown in Fig. 2, the method of Onishi et al. further comprises a mask 20 having alternate transparent stripes (light-transmissive areas 20b) and opaque stripes (light-blocking areas 20a) covering said cell whereby a solidifying energy are being selectively applied there through; and partially solidifying some portions said liquid crystal, wherein said solidifying comprises applying and ultraviolet light (col. 20, lines 49-65).

Re claim 3, the method of Onishi et al. further comprises removing said mask and heating said cell or film to a temperature set point, whereby unsolidified liquid crystals covered by said opaque stripes are being transformed into a different phase (col. 20, line 66 through col. 21, line 4).

Re claim 4, the method of Onishi et al. finally comprises re-solidifying uncured nematics into an isotropic phase (col. 20, line 66 through col. 21, line 4 and lines 35-43).

Art Unit: 2871

5. Claims 24, 25, 31, 32, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (USPN 5,790,221) in view of Gibbons et al. (USPN 4,974,941).

Re claims 24, 25 and 35, as shown in Figs. 4A-4F and 5, Hsieh discloses a method for creating a micropolarizer, comprising:

providing a first flat glass plate 10 having a first and a second surface (col. 3, lines 34-37);

coating a polyimide 20 on said first surface of said first plate (Fig. 4A and col. 3, lines 34-37);

rubbing said polyimide coated upon said first surface of said first plate along a predetermined direction 70 (Fig. 4B);

coating a photo resist 40 on top of said polyimide (Fig. 4C);

patterning said photo resist into a predetermined alternatively spaced strips (Fig. 4D and col. 3, lines 41-43);

re-rubbing said polyimide coated upon said first surface of said first plate along a direction 80 having a predetermined angle in relation to said predetermined direction (Figs. 4E and 5; and col. 3, lines 5-10); and

rinsing off said photo resist (Fig. 4F and col. 3, lines 47-50).

As shown in Fig. 6, the method of Hsieh further comprises:

providing a second flat glass plate 90 having a first and a second surface (col. 3, lines 52-57);

aligning said first plate and said second plate having said first surface of said first

Art Unit: 2871

plate and said first surface of said second plate facing each other thereby creating a space there between (col. 3, lines 58-60); and

filling a liquid crystal between said space whereby a cell is created.

However, Hsieh does not disclose exposing said first plate to linearly polarized UV light.

As shown in Figs. 1 and 2, Gibbons et al. discloses a liquid crystal cell comprising two plates (substrates) coated with a polyimide material which has been rubbed and a guest host liquid crystal medium (col. 5, lines 4-14). Gibbons et al. also discloses a process of aligning or realigning the liquid crystal medium by exposing at least one plate to linearly polarized UV light (col. 5, lines 27-47 and col. 6, lines 1-17).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Onishi et al. with the teaching of Gibbons et al. by exposing the first plate to linearly polarized UV light so as to obtain a display having two or more regions aligned in different homogeneous or homeotropic alignments (col. 2, lines 21-25).

Re claim 31, Hsieh discloses that said space having a substantially equidistance between said first surface of said first plate and said first surface of said second plate (col. 4, lines 18-19);

Re claim 32, Hsieh discloses that said liquid crystal comprises a nematic liquid crystal (col. 4, lines 13-17).

Re claim 34, Hsieh discloses that said predetermined angle is within the range from 0 to 180 degrees (col. 3, lines 5-7).

Art Unit: 2871

6. Claims 11 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi et al. (USPN 6,074,708) in view of Gibbons et al. (USPN 4,974,941) as applied to claims 1-4, 6-10 and 12 above and further in view of Kitayama et al. (USPN 4,778,259).

Re claim 11, Onishi et al. discloses a method for creating a micropolarizer that is basically the same as that recited in claim 11 except for a predetermined angle of about forty-five degrees. As shown in Figs. 1 and 4, Kitayama et al. discloses a liquid crystal device comprising orientation controlling films 105 and 105a formed on substrates 101 (lower) and 101a (upper) respectively (col. 6, lines 33-45), wherein a predetermined angle between orientation axes 11 and 12 of the substrates is set to a range of 30-50 degrees (Fig. 1 and col. 4, lines 29-32) so as to realize an excellent bistability state for the display (col. 3, lines 20-24). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the method of Onishi et al. with the teaching of Kitayama et al. by forming a predetermined angle of about forty-five degrees between orientation axes of the substrates so as to attain an improved contrast for the display.

Re claim 51, it is obvious that a liquid crystal device comprises an input surface for receiving incident light and an output surface for emanating a processed light as shown in Fig. 4 of Kitayama et al., where a cell structure 100 is sandwiched between a pair of polarizers 107 and 108 to form an optical modulation device.

7. Claims 26, 28-30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (USPN 5,790,221) in view of Gibbons et al. (USPN

Art Unit: 2871

4,974,941) as applied to claims 24, 25, 31, 32, 34 and 35 above and further in view of Onishi et al. (USPN 6,074,708).

Hsieh as modified in view of Gibbons et al. discloses a method for creating a micropolarizer that is basically the same as that recited in claims 26, 28-30 and 33 except for solidifying a liquid crystal.

As shown in Figs. 2 and 6, Onishi et al. discloses a method for creating a micropolarizer, comprising:

employing a liquid crystal comprising a type of polymerizable nematic liquid crystal (col. 24, lines 26-30 and 48-57);

solidifying said liquid crystal by applying an ultraviolet light (col. 20, lines 49-65 and col. 24, lines 58-62),

wherein said predetermined angle is about ninety degrees (col. 24, lines 44-47).

The method of Onishi et al. further comprises re-solidifying uncured nematics into an isotropic phase by applying an ultraviolet light (col. 20, line 66 through col. 21, line 4 and lines 35-43).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the method of Hsieh with the teaching of Onishi et al. by solidifying the liquid crystal to create liquid crystal domain surrounded by polymer walls.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Art Unit: 2871

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong

04/18/2004



DUNG T. NGUYEN
PRIMARY EXAMINER